Practice: 490 - Tree/Shrub Site Preparation

Scenario: #1 - Ground Applied Herbicide, Forestland

Scenario Description: This practice involves the use of various herbicides applied using ground-based machinery in order to remove undesirable vegetation and improve site conditions for establishing trees and/or shrubs. Typical sites include abandoned fields, pastures, agricultural fields or forestland that was recently harvested. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate structure and composition.

Before Situation: Undesirable vegetation is present on the site including herbaceous plants and woody vegetation. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs.

After Situation: Undesirable vegetation has been treated using appropriate herbicides, reducing competition for target trees and/or shrubs. Site conditions are favorable for successful establishment of trees and/or shrubs.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 40

Total Scenario Cost: $8,074.09

Scenario Cost/Unit: $201.85

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Materials						
Herbicide, Fosamine	333	Used as foliar spray applied in late summer or early fall for control and/or growth suppression of woody species. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$147.18	40	$5,887.00
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$40.73	40	$1,629.18
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$1.30	40	$51.82
Equipment Installation						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.19	40	$247.77
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$258.32	1	$258.32

Practice: 490 - Tree/Shrub Site Preparation

Scenario: #2 - Aerial Applied Herbicide, Forestland

Scenario Description: This practice involves the use of herbicides applied by helicoptor in order to remove undesirable vegetation and improve site conditions for establishing trees and/or shrubs. This typical scenraio includes open land such as abandoned fields, pastures or forestlands that were recently harvested. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate structure and composition.

Before Situation: Undesirable vegetation is present on the site including herbaceous plants and woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs.

After Situation: Undesirable vegetation has been treated using appropriate herbicides, reducing competition for target trees and/or shrubs. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size of the practice is 40 acres.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 40

Total Scenario Cost: $3,980.05

Scenario Cost/Unit: $99.50

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$110.24	4	$440.95
Equipment Installation						
Chemical, aerial application, turn-key operation	1994	Turn-key chemical application performed by helicopter on forest only. Includes all cost of chemical application including equipment, mobilization, labor and material.	Acre	$88.48	40	$3,539.11

Practice: 490 - Tree/Shrub Site Preparation

Scenario: #3 - Hand Applied Herbicide, Forestland

Scenario Description: This practice involves the use of various herbicides applied using backpack sprayer or similar equipment, and hack-n-squirt for tree control, in order to remove undesirable vegetation and improve site conditions for establishing trees and/or shrubs. Typical sites include lands such as old fields, pastures, rangelands, agricultural fields, previous forestlands that have been abandoned and are now covered with a mixture of grasses, forbs, shrubs and some remnant trees. Resource concerns are: degraded plant condition - undesirable plant productivity and health and inadequate structure and composition.

Before Situation: Undesirable vegetation, including woody and herbaceous plants, occupy 100 % of the the site. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs.

After Situation: Undesirable vegetation has been treated using appropriate herbicides, reducing competition for target trees and/or shrubs. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size of the practice is 40 acres.

Scenario Feature Measure: area of treatment

Scenario Unit: Acre

Scenario Typical Size: 40

Total Scenario Cost: $9,151.06

Scenario Cost/Unit: $228.78

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Materials						
Herbicide, Fosamine	333	Used as foliar spray applied in late summer or early fall for control and/or growth suppression of woody species. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$147.18	40	$5,887.00
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$40.73	40	$1,629.18
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$1.30	40	$51.82
Equipment Installation						
Chemical, spot treatment, single stem application	964	Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included.	Hour	$60.02	20	$1,200.36
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	$22.00	10	$219.98
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$40.68	4	$162.71

Practice: 490 - Tree/Shrub Site Preparation

Scenario: #4 - Rollerchop, Forest

Scenario Description: This practice involves the use of a dozer pulling a roller chopper to treat an area in order to improve site conditions for establishing trees and/or shrubs. It could be used in conjunction with prescribed burning operations. Typical sites include 3-5 year old cut-over forest land with some trees and mostly brush cover that is not appropriate to the site or providing the desired condition for the landowner. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate structure and composition and soil quality degredation - soil erosion - sheet and rill.

Before Situation: The site is non stocked or inadequatly stocked forestland to be reforested, dominated by undesirable vegetation including herbaceous plants and significant amounts of woody vegetation (trees and brush). There is also a significant component of woody debris onsite. Noxious and invasive species may also be present on the site. Soils are compacted as a result of past heavy equipment activities or from other land uses. Sheet and rill erosion is ocurring in areas where the soil was severely disturbed expsoing bare soil. If left untreated, soil compaction and erosion issues will result in poor survival or reduced growth of trees/shrubs to be established on the site.

After Situation: Undesirable vegetation has been removed reducing competition for target trees and/or shrubs. Woody debris has been removed to facilitate tree/shrub planting operations. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size is 40 acres.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 40

Total Scenario Cost: $5,506.33

Scenario Cost/Unit: $137.66

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.52	8	$164.18
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$40.68	8	$325.43
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$493.20	2	$986.39
Equipment Installation						
Heavy mechanical site prep, drum chopping	1316	Mechanical operations that pushing trees and vegetation and crushing them with a water filled roller chopper. Requires heavy equipment such as dozers. Includes equipment, power unit and labor costs.	Acre	$161.21	25	$4,030.33

Practice: 490 - Tree/Shrub Site Preparation

Scenario: #5 - Rollerchop and Spray, Forest

Scenario Description: This practice involves the use of a dozer, rollerchopper and ground applied herbicide to treat an area in order to improve site conditions for establishing trees and/or shrubs. It could be used in conjunction with prescribed burning operations. Typical sites include 3-5 year old cut-over forest land with some trees and mostly brush cover that is not appropriate to the site or providing the desired condition for the landowner. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate structure and composition and soil quality degredation - soil erosion - sheet and rill.

Before Situation: The site is non stocked or inadequatly stocked forestland to be reforested, dominated by undesirable vegetation including herbaceous plants and significant amounts of woody vegetation (trees and brush). There is also a significant component of woody debris onsite. Noxious and invasive species may also be present on the site. Soils are compacted as a result of past heavy equipment activities or from other land uses. Sheet and rill erosion is ocurring in areas where the soil was severely disturbed expsoing bare soil. If left untreated, soil compaction and erosion issues will result in poor survival or reduced growth of trees/shrubs to be established on the site.

After Situation: Undesirable vegetation has been removed to reduce competition for target trees and/or shrubs. Woody debris has been removed to facilitate tree/shrub planting operations. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size is 40 acres.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 40

Total Scenario Cost: $9,585.31

Scenario Cost/Unit: $239.63

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.52	8	$164.18
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$40.68	10	$406.78
Materials						
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$15.93	40	$637.05
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$40.73	40	$1,629.18
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$1.30	40	$51.82
Equipment Installation						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.19	40	$247.77
Heavy mechanical site prep, drum chopping	1316	Mechanical operations that pushing trees and vegetation and crushing them with a water filled roller chopper. Requires heavy equipment such as dozers. Includes equipment, power unit and labor costs.	Acre	$161.21	40	$6,448.52

Practice: 490 - Tree/Shrub Site Preparation

Scenario: #6 - Shear and Pile, Forest, Dozer

Scenario Description: This practice involves the use of heavy machinery to treat an area in order to improve site conditions for establishing trees and/or shrubs. Typical sites include 1-5 year old cut-over forest land with trees and heavy brush cover that is not appropriate to the site or providing the desired condition for the landowner. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate structure and composition and soil quality degradation - soil erosion - sheet and rill.

Before Situation: The site is non stocked or inadequately stocked forestland to be reforested, dominated by undesirable vegetation including herbaceous plants and significant amounts of woody vegetation (trees and brush). There is also a significant component of woody debris onsite. Noxious and invasive species may also be present on the site. Soils are compacted as a result of past heavy equipment activities or from other land uses. Sheet and rill erosion is occurring in areas where the soil was severely disturbed exposing bare soil. If left untreated, soil compaction and erosion issues will result in poor survival or reduced growth of trees/shrubs to be established on the site.

After Situation: Undesirable vegetation has been removed using heavy mechanical methods like shearing and piling to reducing competition for target trees and/or shrubs. Woody debris has been removed to facilitate tree/shrub planting operations. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size is 40 acres.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 40

Total Scenario Cost: $17,063.55

Scenario Cost/Unit: $426.59

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$493.20	1	$493.20
Equipment Installation						
Heavy mechanical site prep, raking	1317	Mechanical operations that pushing and raking trees and vegetation. Requires heavy equipment such as dozers. Includes equipment, power unit and labor costs.	Acre	$192.17	40	$7,686.77
Heavy mechanical site prep, shearing, V-blade, K-G blading	1314	Mechanical operations that shear trees and vegetation. Requires heavy equipment such as dozers, Includes equipment, power unit and labor costs.	Acre	$222.09	40	$8,883.58

Practice: 490 - Tree/Shrub Site Preparation

Scenario: #7 - Mow and Spray, NonForest

Scenario Description: This practice involves the use of a tractor pulling bush hog mower and band sprayed herbicide to clear above ground vegetation and target plants in order to improve site conditions for establishing trees and/or shrubs. Typical sites include abandoned fields, pastures, and agricultural fields. This following resource concerns: soil quality degredation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health and inadequate structure and composition.

Before Situation: Undesirable vegetation is present on the site including herbaceous plants and sparse woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs. Soils are compacted as a result of harvesting heavy equipment activities or other land uses.

After Situation: Undesirable vegetation has been removed, thus enhancing the conditions for planting and survival of trees and/or shrubs. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 40

Total Scenario Cost: $3,714.09

Scenario Cost/Unit: $92.85

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.60	25	$614.98
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.52	5	$102.61
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$40.68	8	$325.43
Materials						
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$15.93	12	$191.11
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$40.73	12	$488.75
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$1.30	12	$15.55
Equipment Installation						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.19	24	$148.66
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	$52.41	25	$1,310.36
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$258.32	2	$516.63

Practice: 490 - Tree/Shrub Site Preparation

Scenario: #8 - Mow and Disk, NonForest

Scenario Description: This practice involves the use of light/moderate machinery to clear above ground vegetation and to also rip/cut/lift underground root systems in order to improve site conditions for establishing trees and/or shrubs. Typical sites include abandoned fields, pastures, and over grown agricultural fields. This following resource concerns: soil quality degredation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health and inadequate structure and composition.

Before Situation: Undesirable vegetation is present on the site including herbaceous plants and sparse woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs. Soils are compacted as a result of harvesting heavy equipment activities or other land uses.

After Situation: Undesirable vegetation has been removed using a bush hog to knock down stand vegetation and heavy tillage equipment is used to breakup and lift root systems, breakup plow pans (<18" deep), thus enhancing the conditions for planting and survival of trees and/or shrubs. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size of the practice is 40 acres.

Scenario Feature Measure: Area of Treatment

Scenario Unit: Acre

Scenario Typical Size: 40

Total Scenario Cost: $3,602.23

Scenario Cost/Unit: $90.06

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.60	25	$614.98
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.52	8	$164.18
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$40.68	8	$325.43
Equipment Installation						
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	$52.41	25	$1,310.36
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.77	40	$670.65
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$258.32	2	$516.63

Practice: 490 - Tree/Shrub Site Preparation

Scenario: #9 - Spray, Cross Rip ARRI

Scenario Description: Spray site with glyphosate pruduct in the summer then mechanically treat proposed planting areas with 4 foot singleshank ripper using a D9 dozer or equivalenton an 8 foot by 8 foot cross section to reduce soil compaction on previously reclaimed mine lands to improve conditions for tree and/or shrub plantings. Cross ripping of slopedarea isdone on the contour to minimize erosion.This scenario refelicts work being done through the Appalchian Regional Reforestation Initiative (ARRI) . http://arri.osmre.gov/fra/advisories/fra_no.4.pdf

Before Situation: Open area has compacted soils and undesrable vegetation due mine raclamation land shaping techniques that will negatively affect the survival and growth of newly planted trees and/shrubs. This practice is used to reduce soil compaction and competing vegetation. Typical treatment area is 5 acres.

After Situation: A previously mined site is sprayed with herbicide and cross ripped to alleviate compaction to allow the desired tree/shrub to be planted in the treated area. Resulting site is more condusive to tree/shrub growth because competion has been eliminated.

Scenario Feature Measure: Acreage treated

Scenario Unit: Acre

Scenario Typical Size: 5

Total Scenario Cost: $3,080.80

Scenario Cost/Unit: $616.16

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$26.87	8	$215.00
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.52	12	$246.27
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$110.24	4	$440.95
Materials						
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$15.93	5	$79.63
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$1.30	5	$6.48
Equipment Installation						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.19	5	$30.97
Dozer, 200 HP	928	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	$196.04	8	$1,568.31
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$493.20	1	$493.20

Practice: 490 - Tree/Shrub Site Preparation

Scenario: #10 - Furrow or Scalp and spray

Scenario Description: In a one pass operation prior to tree planting, furrow/scalp as shallow as possible (2-4) inches to lay aside undesirable thatch and vegetation, and broadcast apply pre-emergent herbicide, such as 2 oz. Oust and 4 oz. Arsenal per acre.

Before Situation: Idle non-forest, open land with significant infestation of weeds that will compete with and reduce survival/growth of planted trees. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate structure and competition and soil quality degradation - soil ersosion - sheet and rill. Typical scenario size is 20 acres.

After Situation: Proposed planting area is free of competing vegetation and ready for tree planting. Reduction/removal of of competing vegetion will improve the survival of trees planted.

Scenario Feature Measure: Acres Treated

Scenario Unit: Acre

Scenario Typical Size: 20

Total Scenario Cost: $2,328.05

Scenario Cost/Unit: $116.40

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.52	8	$164.18
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$28.86	8	$230.87
Materials						
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$40.73	20	$814.59
Herbicide, Sulfometuron &metsulfuron	344	A residual sulfonylurea herbicide that kills broadleaf weeds and some annual grasses. It is a systemic compound with foliar and soil activity. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$22.61	20	$452.25
Equipment Installation						
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	$58.26	7	$407.84
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$258.32	1	$258.32

Practice: 490 - Tree/Shrub Site Preparation

Scenario: #11 - Spray, Furrow or Scalp and Spray

Scenario Description: In preparation for winter tree planting, perform 2 separate site preparation operations. 1. Broadcast spray proposed planting area in July-September with a non-selective herbicide, suchas 8 quarts Razor and 4 ounces of Aresenal per acre. 2. In a one pass opeartion prior to tree planting, furrow/scalp as shallow as possible (2-4 inches) to lay aside undesirable thatch and vegetation and broadcast apply pre-ermergent herbicide, such as 2 oz. Oust and 4 oz. Aresenal per acre.

Before Situation: Idle, non-forest, open land with significant infestation of grass (species depending on location - bermidagrass, fescue, etc.) that will compete with and reduce survival/growth of planted trees. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate stucture and composition and soil quality degradation - soil erosion - sheet and rill. Typical scenario size - 20 acres.

After Situation: Proposed planting area is free of competing grasses and ready for tree planting. Reduction/removal of competing grasses will improve survival/growth of planted trees. Typical scenario size - 20 acres.

Scenario Feature Measure: Acres Treated

Scenario Unit: Acre

Scenario Typical Size: 20

Total Scenario Cost: $2,770.46

Scenario Cost/Unit: $138.52

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.52	8	$164.18
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$28.86	8	$230.87
Materials						
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$15.93	20	$318.52
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$40.73	20	$814.59
Herbicide, Sulfometuron &metsulfuron	344	A residual sulfonylurea herbicide that kills broadleaf weeds and some annual grasses. It is a systemic compound with foliar and soil activity. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	$22.61	20	$452.25
Equipment Installation						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.19	20	$123.89
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	$58.26	7	$407.84
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$258.32	1	$258.32

Practice: 490 - Tree/Shrub Site Preparation

Scenario: #12 - Hand Scalp. 3 foot circles

Scenario Description: Hand treating areas by scalping to bare ground to remove competing grasses/weeds to improve conditions for tree and/or shrub plantings. Work is completed by unskilled laborers. An area of approximately 3 feet in diameter is cleared of all competing grasses/weeds to allow the desired tree/shrub to be planted in the center of the cleared area. Typically at least 109 trees per acre (20' x 20' spacing).Work is typically completed with a rake or hoe. Resulting site is more conducive to tree/shrub growth because competion has been eliminated. Hand scalping is typically used in steep topography or in sensitive riparion sites where other mechanical and chemical means are not appropriate.

Before Situation: Open area covered by grasses/weeds that will compete with the survival and growth of newly planted trees and/shrubs. This practice is used to replace plants that are not adapted or suited to the site based on landowner objectives or to augment poorly stocked areas. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate structure and composition and soil quality degredation - soil erosion - sheet and rill. Typical scenario size - 1 acre.

After Situation: Resulting site is more conducive to tree/shrub growth because competion has been eliminated.

Scenario Feature Measure: Acres Treated

Scenario Unit: Acre

Scenario Typical Size: 1

Total Scenario Cost: $271.02

Scenario Cost/Unit: $271.02

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$20.52	12	$246.27
Equipment Installation						
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	$33.00	0.75	$24.75